April, 2013 FML Proposed Scope of Work:
Mapping uppermost aquifers and water table aquifer flow identification within portions of the Wedron Community

FML proposes an initial phased approach coordinated with the United States Environmental Protection Agency to investigate environmental concerns associated with the groundwater conditions under portions of the Wedron Community.

The initial tasks of the work will be to identify; (Task 1) the geometry of what is conventionally understood as the two uppermost water bearing bedrock horizons (St. Peter and New Richmond Sandstones) in the area, and (Task 2) groundwater flow patterns within what is believed to be the water table aquifer found within the St. Peter Sandstone. Proposed work will be within and around portions of the Wedron Community, unincorporated LaSalle County, Illinois.

Task 1
Task 1 will entail down-hole measurements and geo-physical data collection from up to seven water wells owned by Wedron Silica. Six of the FML wells are located in or close proximity of the Wedron community. The seventhS FML water well is located some distance to the south where active mining operations are occurring.

Work will be limited to existing water wells that are accessible with contractor equipment. A qualified contractor will be mobilized to Wedron to pull existing pumps and piping from the accessible wells and complete a variety of down hole test to determine well diameter, well depth, casing depth, pump depth, and geologic horizons penetrated by the well. The down-hole techniques will likely include data associated with video, caliper, gamma and magnetic/resistivity. The resulting data should begin to provide information as to the aerial extensiveness of the St. Peter and New Richmond Sandstones as well as the configuration of the confining unit (Shakopee dolomite) that should be found between the two sandstones. The data should also begin to define any regional dip or erosional features in these deposits. For each measured well, the results will indicate construction techniques and the aquifer groundwater is being obtained from.

All measurements will be from the top of the surface casing for each well. A surveying contractor will be brought in to determine the latitude, longitude and elevation of each measured well as well as the elevation of the adjacent ground surface.

Task 2
Task 2 will entail the advancement of up to 8 borings around portions of the Wedron community. The borings will be continuously sampled through unconsolidated sediments with either hollow-stem split spoon or rotary-sonic drilling techniques. The bedrock horizons will be penetrated with either rotary wash or rotary-sonic drilling techniques. Each boring will be terminated after advancing 10' and 20' into the bedrock water table aquifer surface. Each of the eight borings is designated to be converted into a groundwater monitoring well by installation of a 15' of slotted 2" diameter PVC well screen that will

straddle the water table surface. The screen will be connected to a solid 2" PVC riser pipe to bring the well to the surface. Well construction materials and development techniques will follow conventional environmental practices.

Environmental screening will be performed of the Earth materials encountered in each boring as well as waters from each groundwater monitoring well. Samples of soils, bedrocks, and waters may be collected for analysis by a qualified laboratory. The USEPA will be welcome to collect samples of soils, bedrocks, and ground-waters if they select to do so.

Additional Task 2 activities will include the installation of a either pressure transducers or staff gages in a variety of area surface water bodies. Pressure Transducers will be installed in Wedron Silica Pits 1, 2, and 3 as well as in a single Fox River location. Additionally, staff gages are planned to be installed in two locations on Buck Creek as well as one location on the Fox River.

The groundwater monitoring network will be augmented with use of the existing piezometer installed by the Illinois EPA under the direction of the USEPA in July of 2012 in geoprobe boring GP-14.

As with Task 1, a qualified land surveying contractor will be mobilized to the site to in to determine the latitude, longitude and elevation of each monitoring well casing, pressure transducer, and staff gage. Additionally, the surveying contractor will determine the elevation of the adjacent ground surface at each monitoring well.

Groundwater and surface water levels will be collected weekly by trained individuals by working for the environmental contractor for FML. Data from transducers will be downloaded on a regular frequency. FML welcomes the USEPA and their associated contractor to collect additional ground and surface water levels. Data from the pressure transducer downloads will also be shared.

Data Evaluation and Future Tasks

Data from Task 1 and Task 2 activities along with data from investigations completed by others will be evaluated and discussed with the USEPA/Illinois EPA to determine future investigation needs. It is believed that Task 1 and Task 2 will clarify the understanding of the near surface bedrock aquifers under the Wedron Community as well as further define groundwater flow. This enhanced understanding of subsurface conditions will facilitate a focused effort for additional tasks.

Google earth

feet 3000
meters 900

Approximate location of soil borings advanced into the upper water bearing horizon of the St. Peter sandstone and converted into monitoring wells.

Approximate location of pressure transducers and staff gages to be installed in surface water bodies.

Approximate location of FML water wells targeted for down-hole geophysics (if accessible).